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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/543,235

04/05/2000

John C. Krumm

MCS-008-00

6912

27662

7590

08/27/2002

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EXAMINER

LAU, TUNG S

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 08/27/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/543,235

Applicant(s)

KRUMM, JOHN C.

Examiner

Tung S Lau

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 July 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 1, 2, 4, 6, 12, 13, 14, 15, 16, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sengupta et al. (U.S. Patent 6,359,647) in view of Burkhardt et al. (U.S. Patent 4,631,598)

Sengupta discloses a method of determining relative position and orientation of base and non-base camera, measuring a path of an object in coordinate frame (fig. 1, 6a, 6b, col. 4, lines 26-45, col. 9, lines 14-45), calculating transformation parameters based on object path (fig. 6a-6b), applying the transformation parameters from measurement (fig. 6a, fig. 1, block 140, 144, 142), generate a path of an object from cameras (fig. 5a-5c), a path of a moving person around the scene (fig. 5a-5c), use of interpolation (col. 9, lines 29-36).

Sengupta ~~discloses~~ does not disclose data overlapping and time offset value for the transformation, Burkhardt disclose such approach (col. 2-3, lines 55-15) to work in a high speed and variable resolution digital system (col. 1, lines 54-64)

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sengupta to have the data overlapping and time offset value for the transformation taught by Burkhardt in order to work in a high speed and variable resolution digital system.

**b.** Claims 3, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Sengupta as applied to claims above, and further in view of Takayama et al. (U.S. Patent 6,138,196)

The Sengupta combination disclose a method including the subject matter discussed above except performing data matching point, Takayama disclose such approach (col. 10, lines 34-43), to use in a various type of digital interface system (col. 2, lines 1-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sengupta to perform data matching point taught by Takayama in order to use in a various type of digital interface system.

**c.** Claims 7, 8, 9, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Sengupta as applied to claims above, and further in view of Thompson et al. (U.S. Patent 5,764,516)

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The Sengupta combination disclose a method including the subject matter discussed above except least squares solution and least median of squares solution error minimization technique, Thompson disclose such usage (col.2, lines 47-60, col. 48-55), for phase correction on a multiple frequency bands system and to reduce measurement error (col. 4, lines 13-21, 58-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sengupta to use least squares solution and least median of squares solution error minimization technique taught by Thompson in order to reduce measurement error.

d. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Sengupta as applied to claims above, and further in view of Grumet et al. (U.S. Patent 4,490,849)

The Sengupta combination disclose a method including the subject matter discussed above except correction of unsynchronized data between cameras, Grumet disclose such approach (col.12, lines 16-30) for an optical matched image correlation system and have an accurate adjustment of the object (col. 1-2, lines 65-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Sengupta to use correction of unsynchronized

data between cameras taught by Grumet in order to have an optical matched image correlation system and have an accurate adjustment of the object.

***Response to Arguments***

2. Applicant's arguments filed 7/31/2002 have been fully considered but they are not persuasive.

a. Applicant argue the lack of motivation in Burkhardt. The advantage of Burkhardt's invention is to work in a high speed and variable resolution digital system (col. 1, lines 54-64) and to increase the speed of scanning and the quality of the data produced (col. 2, lines 5-30), seems is a good reason to increase quality of the data gather in a high speed and high resolution system.

b. Applicant continue on arguing that Sengupta invention work in the same coordinate system (col.7, lines 16-17), and that different from the claim invention which use different coordinate system. While is commonly well known in the art at the time the invention was made to know to use transformation of coordinate in order to increase the speed of calculation of data specially between Cartesian coordinate and rotational coordinate or polar coordinates (College freshman Calculus courses); Thormann et al. (U.S. Patent 4,381,608, May 1983) illustrated the well known features of the transformation of coordinates and the advantage of using such system (fig. 1-4, col.1, lines 35-57).

**c.** Applicant continue to argue that the applicant 'transformation parameters' is different from Sengupta 'interpolation (col. 9, lines 29-31), both forms obtain the final products from a know results using formula of calculation.

The definition of transformation is the operation of changing (as by rotation or mapping) one configuration or expression into another in accordance with a mathematical rule. And interpolation is to estimate values of (a function) between two known values, according to Merriam Webster at <http://www.m-w.com/cgi-bin/dictionary>; they both arrive the results by applying function or rules which relates to the original data.

**d.** Applicant argue the lack of motivation to combine Tayayama. The applicant invention interface using various type of digital interface (fig. 1), it is obvious to have a system that can work with different type of digital interface system (Takayama co. 2, lines 1-9).

**e.** Applicant argue the lack of motivation to combine Thompson; While it is positive objective for the invention to reduce error on any measurement system (for phase correction on a multiple frequency bands system and to reduce measurement error (col. 4, lines 13-21, 58-63)).

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f. Applicant argue the lack of motivation to combine Grumet. Grumet teaches the correction of unsynchronized data between cameras (col.12, lines 16-30), for an optical matched image correlation system and have an accurate adjustment of the object (col. 1-2, lines 65-10). It is a desired for the invention to be accurate adjustment on an object by having optical matched image correlation system.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 703-305-3309.

The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John S Hilten can be reached on 703-308-0719. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TL

August 15, 2002



**JOHN S. HILTEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800**